

Post-Implementation Monitoring in the Dead River

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In 1998, the Michigan Department of Environmental Quality issued a 401 Water Quality Certification to the Upper Peninsula Power Company (UPPCO) requiring a minimum flow of 20 cubic feet per second (cfs) from the McClure Dam to a bypassed reach of the Dead River in Marquette County, MI. To obtain baseline data prior to this release, temperature, channel morphology, and fish data were collected in 2000 from the bypassed reach. A major flood occurred along the Dead River in May 2003 due to a dam failure. Because the flood had the potential to substantially alter channel conditions, the bypassed reach was reassessed for temperature and channel morphology to establish a new baseline condition. Results indicated that daily average water temperature during 2004 was unchanged from 2000, except for instances when water was released over the top of McClure Dam. Channel width and depth in the bypassed reach was greater after the flood than before.

In April 2005, UPPCO initiated the 20 cfs discharge from the McClure Impoundment. Water temperatures in 2006 were higher at the beginning of the bypassed reach compared to 2000 and 2004, but were almost identical by the end of the reach. Temperatures at all locations met the Michigan Water Quality Standard for cold-water rivers. Post-implementation monitoring for fish and channel morphology will be conducted in the future. This study highlights the need for 1) long-term monitoring commitments; 2) public-private partnerships in conducting long-term, comprehensive studies; 3) multiple data types (chemical, biological, physical) to assess changes; and 4) the need to account for confounding events/variables.

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